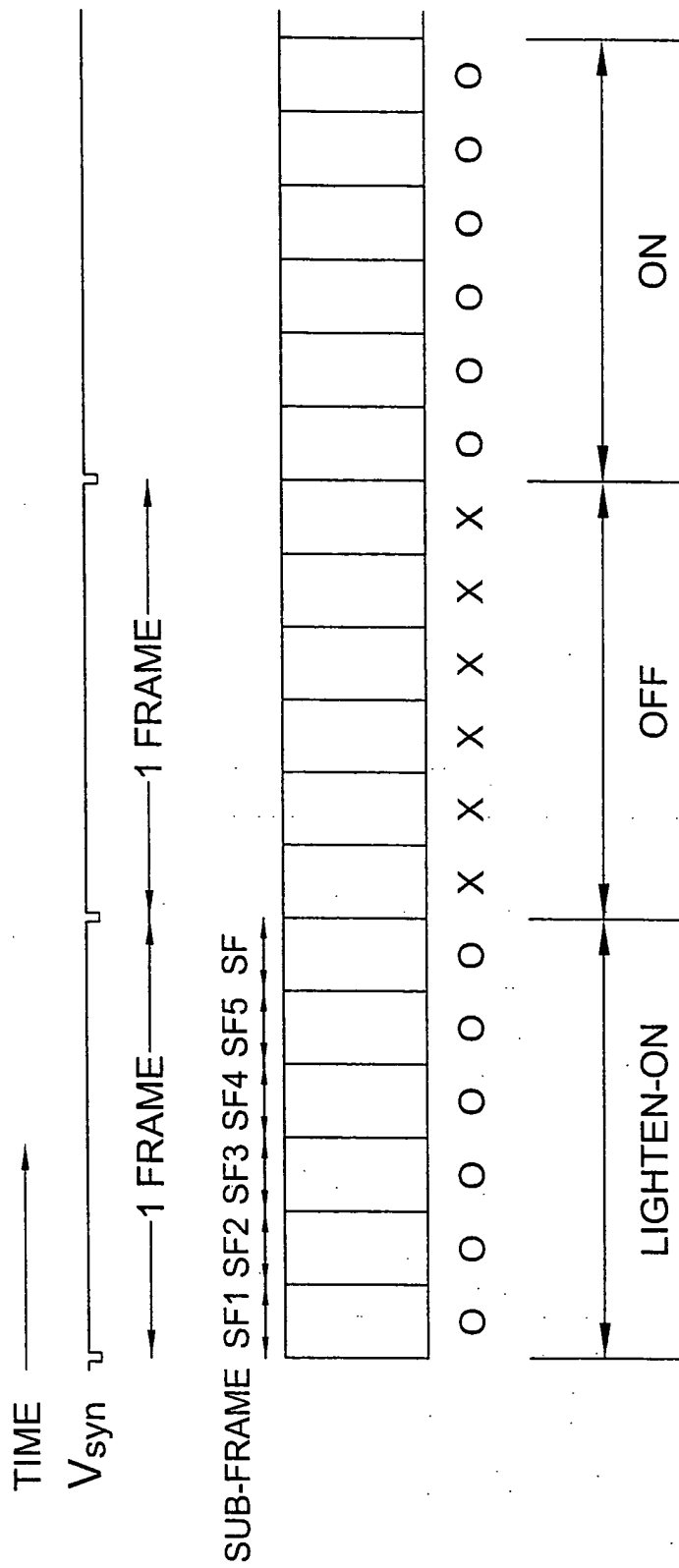


(Analog Grayscale Representation)

FIG. 1

RELATED ART



Grayscale Representation

FIG. 2

RELATED ART

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SUBFRAME TIME				
WEIGHT	2^3	2^2	2^1	1
ILLUMINATION	1	1/2	1/4	1/8

$$1 \times 1/4 + 1/2 \times 1/4 + 1/4 \times 1/4 + 1/8 \times 1/4 = 15/32 = 50\%$$

4-BIT Greyscale Representation
with Weighted Illumination

FIG. 4

RELATED ART

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SUBFRAME TIME				
WEIGHT	2^3	2^2	2	1
ILLUMINATION	1	1	1	1

$$8/15 + 4/15 + 2/15 + 1/15 = 15/15 = 100\%$$

$$1 \times 1/4 + 1/2 \times 1/4 + 1/4 \times 1/4 + 1/8 \times 1/4 = 15/32 = 50\%$$

4-bit Grayscale Representation
with Uniform Illumination

FIG. 5

RELATED ART

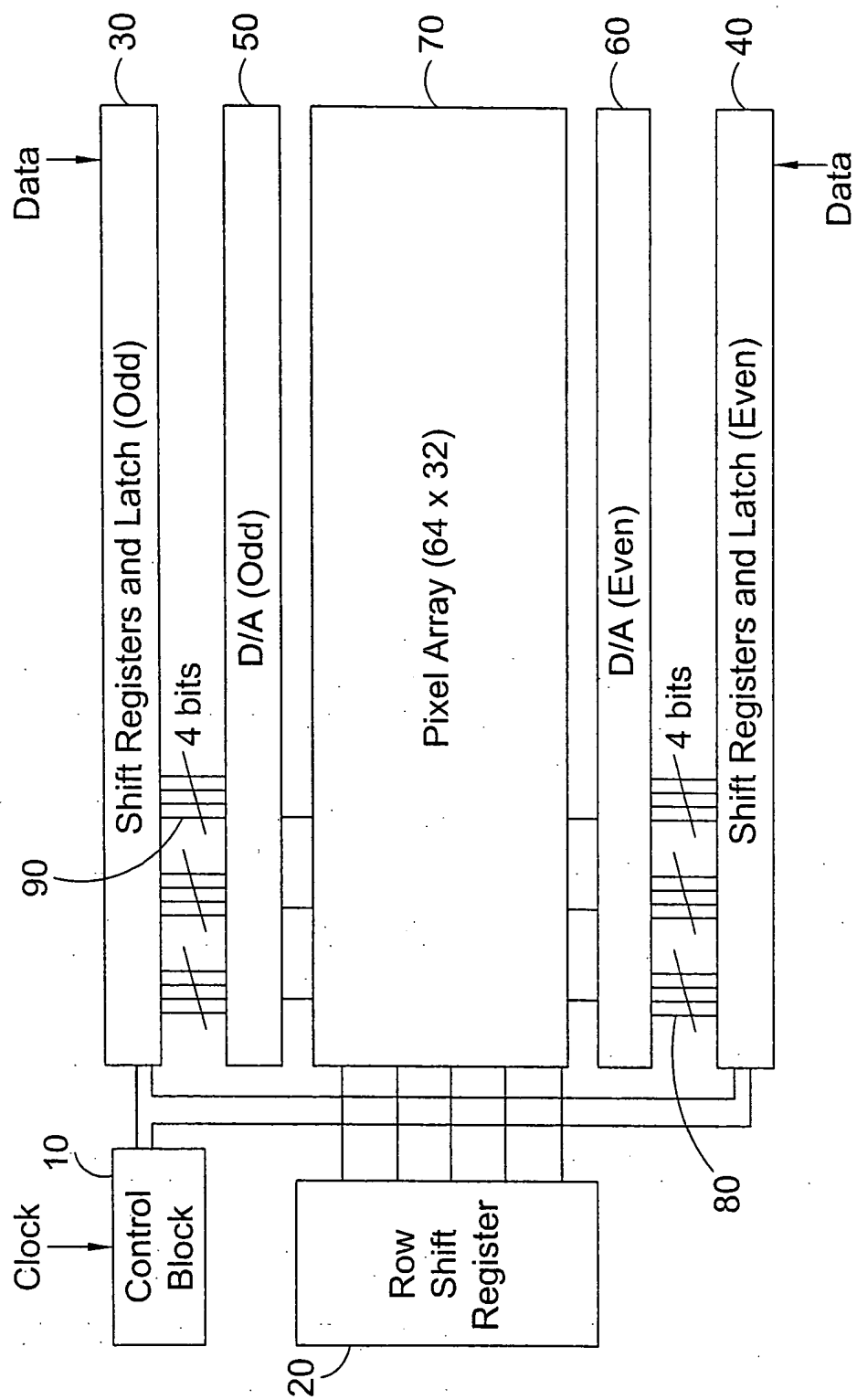
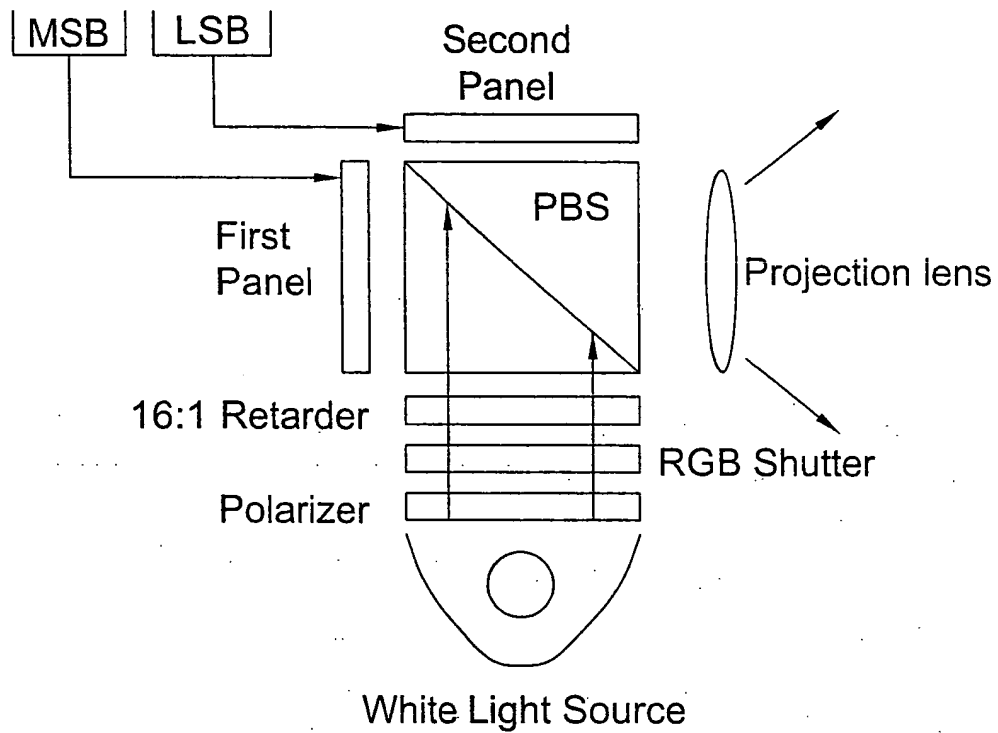


FIG. 6

The Architecture of a Mixed Mode Driver Chip

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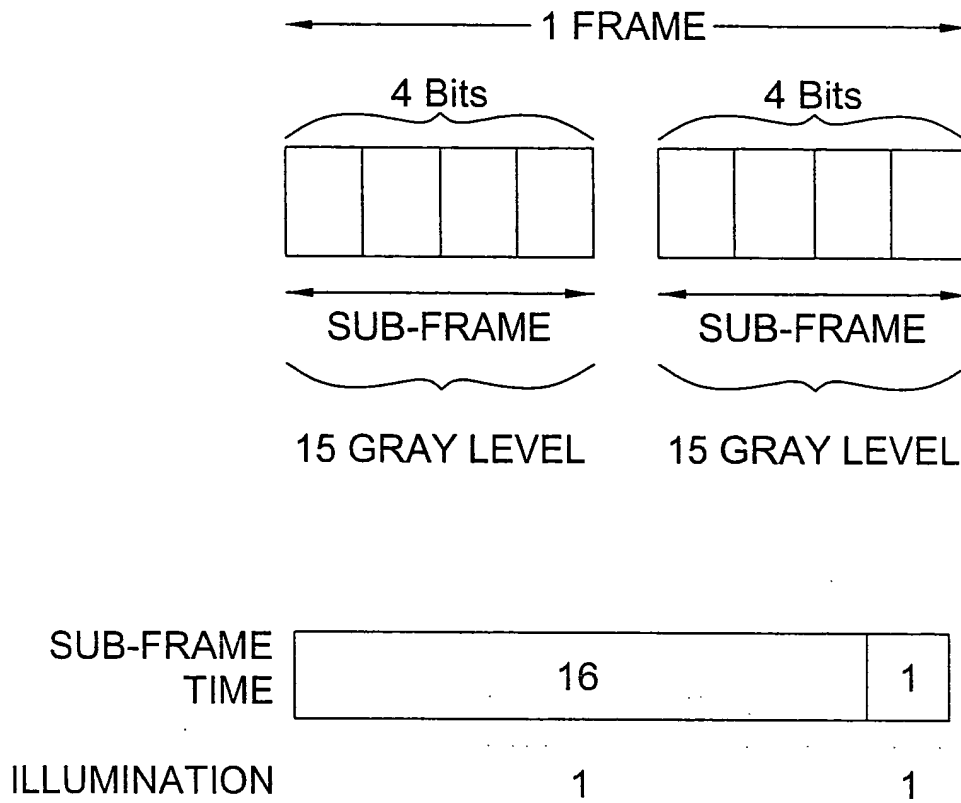
Data: 1 0 1 0 1 1 1 0



Mixed grayscale method with two panels

FIG. 7

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$$\begin{aligned}
 16/7 \times 15 + 1/7 \times 15 &= 255/7 \\
 &= 36.428571 \\
 &= 100\%
 \end{aligned}$$

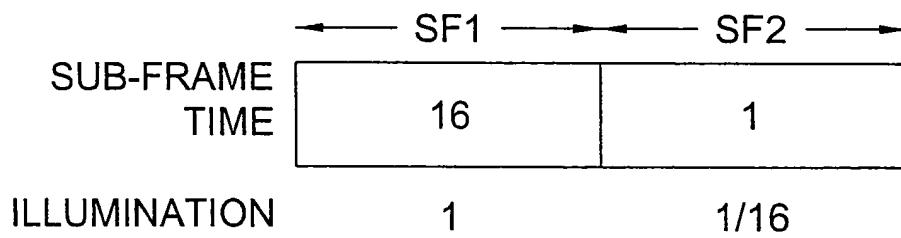
Mixed Method of Grayscale Representation

FIG. 8

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UNIFORM SUB-FRAME TIME

N = 0



$$\begin{aligned} & 1/2 \times 15 \text{ (GRAY SCALE)} + 1/2 \times 1/16 \times 15 \\ & = 255/32 = 8 = 50\% \end{aligned}$$

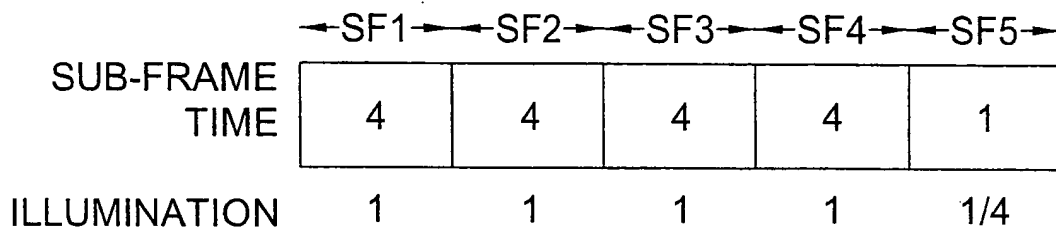
A Mixed Greyscale Representation with 2 Sub-Frames

FIG. 9

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UNIFORM SUB-FRAME TIME

N = 2

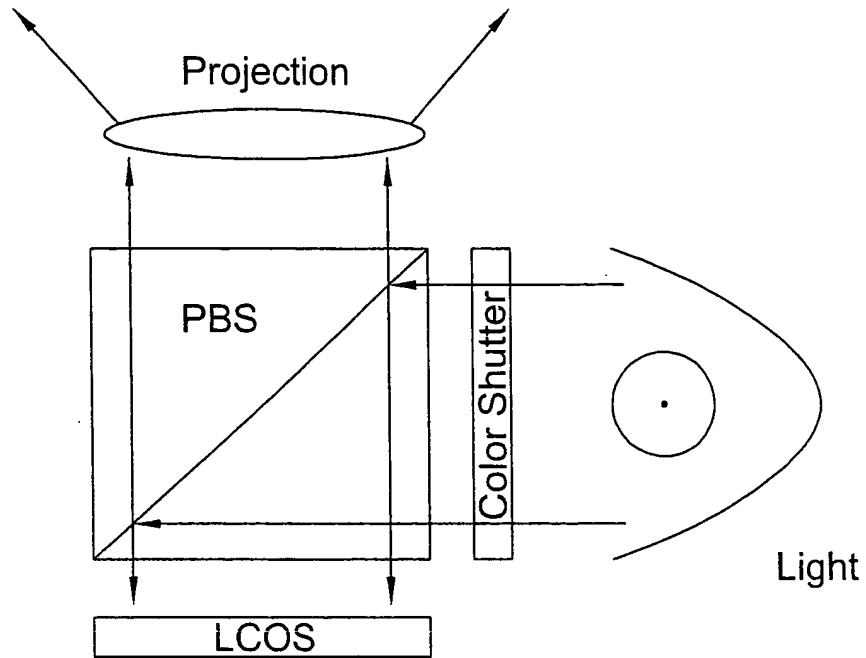


$$\begin{aligned} &4/5 \times 15 \text{ (Grayscale)} + 1/5 \times 1/4 \times 15 \\ &= 255/20 = 12.75 = 85\% \end{aligned}$$

Mixed Greyscale Representation with 5 Sub-Frames

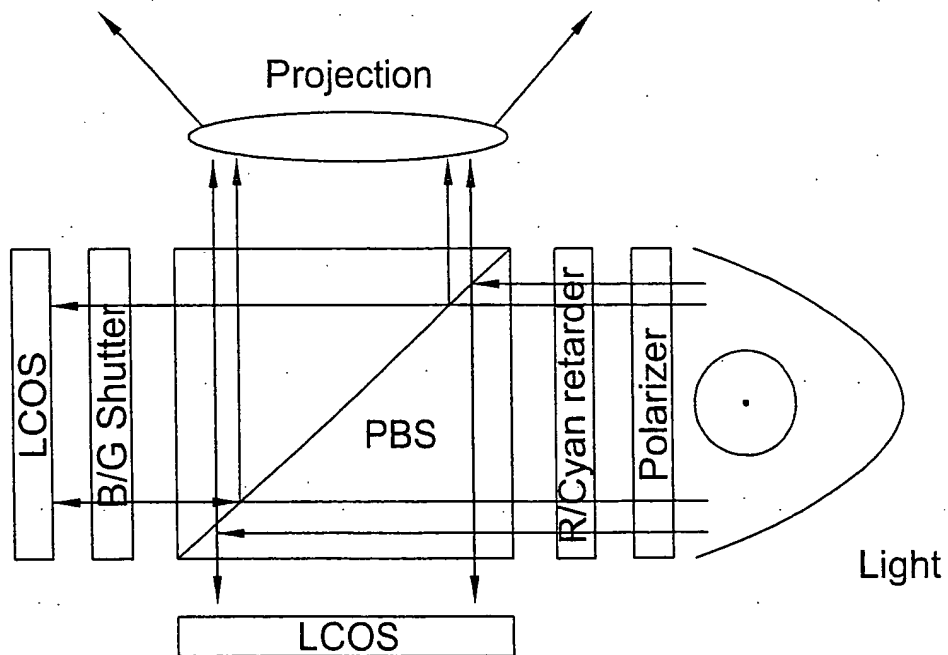
FIG. 10

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1-Panel Projection Display with Field Sequential Color

FIG. 11



2-Panel Projection Display with Partial Field Sequential Color

FIG. 12